GEOLOGY.—*An* Acanthoceras rhotomagense *fauna in the Cretaceous of the Western Interior.*[1] JOHN B. REESIDE, JR., U. S. Geological Survey.

Ammonites belonging to the genus *Acanthoceras* in the strict sense, that is, to the group of *A. rhotomagense* Defrance, have been reported from the Woodbine sand and basal Eagle Ford clay of Texas.[2] They have not been recorded, so far as the writer knows, in the literature dealing with the Cretaceous of the Western Interior province. A note of two localities in this region where *Acanthoceras* aff. *A. rhotomagense* occurs is therefore of interest to students of Cretaceous stratigraphy and faunas.

One locality, in south-central Colorado, found by G. K. Gilbert, many years ago lies 1½ miles west of the head of Rock Canyon, in Pueblo County southwest of Pueblo, and the horizon of the fossils is in the Graneros shale about 60 feet above the Dakota sandstone. Most of the species associated with the *Acanthoceras* are undescribed pelecypods and gastropods, though unnamed species of *Turrilites* and *Mammites* (*Pseudaspidoceras*), and an engonoceratid are also represented by fragmentary or somewhat distorted specimens. The next underlying marine fauna is in the Purgatoire formation, beneath the Dakota sandstone, and is composed of Comanchean species. The next overlying fauna is in the Greenhorn limestone, about 150 feet higher in the section, though the intervening part of the Graneros shale has yielded *Exogyra suborbiculata* Lamarck, a small *Ostrea*, and *Inoceramus labiatus* Schlotheim. The Greenhorn limestone is 25 feet thick and contains *Inoceramus labiatus*, a new species of *Thomasites*, *Helicoceras corrugatum* Stanton, *Baculites gracilis* Shumard, *"Acanthoceras" coloradoense* Henderson, and *Metoicoceras whitei* Hyatt. Two hundred feet higher in the section, at the top of the Carlile shale, a fauna with

[1] Published by permission of the Director, U. S. Geological Survey. Received Oct. 1, 1927.

[2] RUDOLF LASSWITZ, *Die Kreide-ammoniten von Texas* (*Collectio F. Roemer*). Geol. Pal. Abh. **10**: 237. 1904.

GAYLE SCOTT, *Études stratigraphiques et paléontologiques sur les terrains crétacés du Texas* p. 136. Grenoble, 1926.

GAYLE SCOTT, *The Woodbine sand of Texas interpreted as a regressive phenomenon.* Bull. Am. Ass. Petr. Geol. **10**: 617. 1926.

Prionocyclus wyomingense Meek, *Ostrea lugubris* Conrad, and *Scaphites warreni* Meek and Hayden occurs. An expected intermediate fauna with *Prionotropis woolgari* Mantell (of Meek) has not been recognized.

The second locality, in middle western Colorado, about 7 miles west of Delta in Delta County, was first found by G. H. Stone and later rediscovered by H. J. Weeks. Here the horizons are in the upper sandstone and upper shale of the Dakota (?) sandstone, the lowest marine beds in the local Cretaceous section. The specimens of *Acanthoceras* are very rare and are accompanied only by an *Inoceramus* of the group of *I. crippsi* close to *I. belvuensis* Reeside. Some 75 feet higher in the section, in the Mancos shale, *Gryphaea newberryi* Stanton and *Inoceramus labiatus* occur, and 200 to 300 feet higher still, the *Prionocyclus* fauna. The basal part of the Mancos shale in adjacent areas in Colorado and eastern Utah has yielded *Exogyra suborbiculata*, *E. columbella* Meek, *Metoicoceras whitei*, and a species of *Mammites* (*Pseudaspidoceras?*). An interesting species at this horizon a little farther west is *Exogyra olisiponensis* Sharpe. The *Prionotropis woolgari* fauna has not been recognized in this second area.

The similarity in the sequence of faunas in the two areas makes it likely that the age of the beds containing the *Acanthoceras* is nearly the same and that the deposition of sandstone at the western locality began sometime after it had ceased at the eastern locality, the intervening time being represented by the 60 feet of lower Graneros shale between the *Acanthoceras* horizon and the Dakota sandstone.

The genus *Acanthoceras*, in the strict sense, has been universally considered to characterize the Cenomanian part of the Upper Cretaceous, and such species as *Metoicoceras whitei* the lower Turonian. The occurrence of *Acanthoceras* in the Western Interior region permits a more definite age assignment of the containing beds and a more definite correlation with the Gulf region and with other areas outside the United States.

PROCEEDINGS OF THE ACADEMY AND AFFILIATED SOCIETIES

ENTOMOLOGICAL SOCIETY

393D MEETING

The 393d regular meeting was held May 5, 1927, in Room 43 of the National Museum. President J. A. HYSLOP presided. There were present 21 members and 13 visitors.